

HAAS C.N.C. MILL PREPARATORY FUNCTIONS

MODAL
NON-MODAL
DEFAULT *
OPTIONAL **

G00* RAPID POSITIONING MOTION (X,Y,Z,A,B) (SETTING 10, 56, 101)	G73 HIGH SPEED PECK DRILL CANNED CYCLE (X,Y,A,B,Z,I,J,K,Q,P,R,L,F) (SETTING 22, 52)
G01 LINEAR INTERPOLATION MOTION (X,Y,Z,A,B,F)	G74 REVERSE TAPPING CANNED CYCLE (X,Y,A,B,Z,J,R,L,F) (SETTING 130, 133)
G02 CIRCULAR INTERPOLATION MOTION CW (X,Y,Z,A,I,J,K,R,F)	G76 FINE BORING CANNED CYCLE (X,Y,A,B,Z,I,J,P,Q,R,L,F) (SETTING 27)
G03 CIRCULAR INTERPOLATION MOTION CCW (X,Y,Z,A,I,J,K,R,F)	G77 BACK BORE CANNED CYCLE (X,Y,A,B,Z,I,J,Q,R,L,F) (SETTING 27)
G04 DWELL (P) (P=seconds", "milliseconds)	G80* CANCEL CANNED CYCLE (SETTING 56)
G09 EXACT STOP, NON-MODAL	G81 DRILL CANNED CYCLE (X,Y,A,B,Z,R,L,F)
G10 PROGRAMMABLE OFFSET SETTING (X,Y,Z,A,L,P,R)	G82 SPOT DRILL / COUNTERBORE CANNED CYCLE (X,Y,A,B,Z,P,R,L,F)
G12 CW CIRCULAR POCKET MILLING (Z,I,K,Q,D,L,F)	G83 PECK DRILL DEEP HOLE CANNED CYCLE (X,Y,A,B,Z,I,J,K,Q,P,R,L,F) (SETTING 22, 52)
G13 CCW CIRCULAR POCKET MILLING (Z,I,K,Q,D,L,F)	G84 TAPPING CANNED CYCLE (X,Y,A,B,Z,J,R,L,F) (SETTING 130, 133)
G17* CIRCULAR MOTION XY PLANE SELECTION (G02 or G03) (SETTING 56)	G85 BORE IN-BORE OUT CANNED CYCLE (X,Y,A,B,Z,R,L,F)
G18 CIRCULAR MOTION ZX PLANE SELECTION (G02 or G03)	G86 BORE IN-STOP-RAPID OUT CANNED CYCLE (X,Y,A,B,Z,R,L,F)
G19 CIRCULAR MOTION YZ PLANE SELECTION (G02 or G03)	G87 BORE IN-MANUAL RETRACT CANNED CYCLE (X,Y,A,B,Z,R,L,F)
G20* VERIFY INCH COORDINATE POSITIONING (SETTING 9, set to INCH)	G88 BORE IN-DWELL-MANUAL RETRACT CANNED CYCLE (X,Y,A,B,Z,P,R,L,F)
G21 VERIFY METRIC COORDINATE POSITIONING (SETTING 9 set to METRIC)	G89 BORE IN-DWELL-BORE OUT (X,Y,A,B,Z,P,R,L,F)
G28 MACHINE ZERO RETURN THRU REF. POINT (X,Y,Z,A,B) (SETTING 108)	G90* ABSOLUTE POSITIONING COMMAND
G29 MOVE TO LOCATION THROUGH G28 REF. POINT (X,Y,Z,A,B)	G91 INCREMENTAL POSITIONING COMMAND (SETTING 29)
G31** FEED UNTIL SKIP FUNCTION (X,Y,Z,A,B,F)	G92 GLOBAL WORK COORDINATE SYSTEM SHIFT (FANUC) (HAAS) (SETTING 33)
G35** AUTOMATIC TOOL DIAMETER MEASUREMENT (D,H,Z,F)	G92 SET WORK COORDINATE VALUE (YASNAC) (SETTING 33)
G36** AUTOMATIC WORK OFFSET MEASUREMENT (X,Y,Z,A,B,I,J,K,F)	G93 INVERSE TIME FEED MODE ON
G37** AUTOMATIC TOOL LENGTH MEASUREMENT (D,H,Z,F)	G94* INVERSE TIME FEED MODE OFF / FEED PER MINUTE ON (SETTING 56)
G40* CUTTER COMP CANCEL G41/G42/G141 (X,Y)	G95 FEED PER REVOLUTION (SETTING 9, 56)
G41 2D CUTTER COMPENSATION, LEFT (X,Y,D) (SETTING 40, 43, 44, 58)	G98* CANNED CYCLE INITIAL POINT RETURN (SETTING 56)
G42 2D CUTTER COMPENSATION, RIGHT (X,Y,D) (SETTING 40, 43, 44, 58)	G99 CANNED CYCLE "R" PLANE RETURN
G43 TOOL LENGTH COMPENSATION+ (H,Z) (SETTING 15)	G100 MIRROR IMAGE G101 CANCEL
G44 TOOL LENGTH COMPENSATION- (H,Z) (SETTING 15)	G101 MIRROR IMAGE (X,Y,Z,A,B) (SETTING 45, 46, 47, 48, 80)
G47 TEXT ENGRAVING (X,Y,Z,R,I,J,P,E,F) (Macro Variable 599 Change Serial #)	G102 PROGRAMMABLE OUTPUT TO RS-232 (X,Y,Z,A,B)
G49* TOOL LENGTH COMPENSATION CANCEL G43/G44/G143 (SETTING 56)	G103 LIMIT BLOCK LOOKAHEAD (P0-P15 for number control looks ahead)
G50* SCALING G51 CANCEL (SETTING 56)	G107 CYLINDRICAL MAPPING (X,Y,Z,A,Q,R)
G51** SCALING (X,Y,Z,P) (SETTING 71)	G110-G129 WORK OFFSET POSITIONING COORDINATE #7-26
G52 WORK OFFSET POSITIONING COORDINATE (SETTING 33, YASNAC)	G136** AUTOMATIC WORK OFFSET CENTER MEASUREMENT
G52 GLOBAL WORK COORDINATE OFFSET SHIFT (SETTING 33, FANUC)	G141 3D+ CUTTER COMPENSATION (X,Y,Z,I,J,K,D,F)
G52 GLOBAL WORK COORDINATE OFFSET SHIFT (SETTING 33, HAAS)	G143** 5-AXIS TOOL LENGTH COMPENSATION+ (X,Y,Z,A,B,H) (SETTING 15, 117)
G53 MACHINE ZERO XYZ POSITIONING, NON-MODAL (X,Y,Z,A,B)	G150 GENERAL PURPOSE POCKET MILLING (X,Y,P,Z,I,J,K,Q,D,R,L,S,F)
G54* WORK OFFSET POSITIONING COORDINATE #1 (SETTING 56)	G153** 5-AXIS HIGH SPEED PECK DRILL CANNED CYCLE (X,Y,A,B,Z,I,J,K,Q,P,E,L,F) (SETTING 22)
G55 WORK OFFSET POSITIONING COORDINATE #2	G154** SELECT WORK OFFSET POSITIONING COORDINATE P1-99 (P)
G56 WORK OFFSET POSITIONING COORDINATE #3	G155** 5-AXIS REVERSE TAPPING CANNED CYCLE (X,Y,A,B,Z,J,E,L,F)
G57 WORK OFFSET POSITIONING COORDINATE #4	G161** 5-AXIS DRILL CANNED CYCLE (X,Y,A,B,Z,E,L,F)
G58 WORK OFFSET POSITIONING COORDINATE #5	G162** 5-AXIS SPOT DRILL / COUNTERBORE CANNED CYCLE (X,Y,A,B,Z,P,E,L,F)
G59 WORK OFFSET POSITIONING COORDINATE #6	G163** 5-AXIS PECK DRILL CANNED CYCLE (X,Y,A,B,Z,I,J,K,Q,P,E,L,F) (SETTING 22)
G60 UNI-DIRECTIONAL POSITIONING (X,Y,Z,A,B) (SETTING 35)	G164** 5-AXIS TAPPING CANNED CYCLE (X,Y,A,B,Z,J,E,L,F)
G61 EXACT STOP, MODAL (X,Y,Z,A,B)	G165** 5-AXIS BORE IN, BORE OUT CANNED CYCLE (X,Y,A,B,Z,E,L,F)
G64* EXACT STOP G61 CANCEL (SETTING 56)	G166** 5-AXIS BORE IN, STOP, RAPID OUT CANNED CYCLE (X,Y,A,B,Z,E,L,F)
G65** MACRO SUB-ROUTINE CALL	G169** 5-AXIS BORE IN, DWELL, BORE OUT (X,Y,A,B,Z,P,E,L,F)
G68** ROTATION (G17,G18,G19,X,Y,Z,R) (OPTION) (SETTING 72, 73)	G174 NON-VERTICAL RIGID TAPPING CCW (X,Y,Z,F)
G69* ROTATION G68 CANCEL (SETTING 56)	G184 NON-VERTICAL RIGID TAPPING CW (X,Y,Z,F)
G70 BOLT HOLE CIRCLE with a CANNED CYCLE (I,J,L)	G187 ACCURACY CONTROL FOR HIGH SPEED MACHINING (E) (SETTING 85)
G71 BOLT HOLE ARC with a CANNED CYCLE (I,J,K,L)	G188 G188 GET PROGRAM FROM PST (Program Schedule Table)
G72 BOLT HOLES ALONG AN ANGLE with a CANNED CYCLE (I,J,L)	

Note: These G and M codes are useful reference information, on a desk, or at the machine. They're great to have laminated with G codes on one side and M codes on the other. As a suggestion; get 90lb. white cardstock and print G-codes on one side and M-codes on the other. Cut out the square section and go to your local local printer to get them laminated.

HAAS C.N.C. MILL MISCELLANEOUS FUNCTIONS

OPTION**

M00	PROGRAM STOP (SETTING 39, 42)	M50**	EXECUTE PALLET CHANGE (P) (SETTING 121 thru 129)
M01	OPTIONAL PROGRAM STOP (SETTING 17, 39)	M51-M58	OPTIONAL USER M CODE SET
M02	PROGRAM END (SETTING 39)	M59	OUTPUT RELAY SET (N)
M03	SPINDLE ON CLOCKWISE (S) (SETTING 144)	M61-M68	OPTIONAL USER M CODE CLEAR
M04	SPINDLE ON COUNTERCLOCKWISE (S) (SETTING 144)	M69	OUTPUT RELAY CLEAR (N)
M05	SPINDLE STOP	M75	SET G35 OR G136 REFERENCE POINT
M06	TOOL CHANGE (T) (SETTING 42, 87, 155)	M76	CONTROL DISPLAY INACTIVE
M08	COOLANT ON (SETTING 32)	M77	CONTROL DISPLAY ACTIVE
M09	COOLANT OFF	M78	ALARM IF SKIP SIGNAL FOUND
M10**	4th AXIS BRAKE ON	M79	ALARM IF SKIP SIGNAL NOT FOUND
M11**	4th AXIS BRAKE RELEASE	M80**	AUTOMATIC DOOR OPEN (SETTING 131)
M12**	5th AXIS BRAKE ON	M81**	AUTOMATIC DOOR CLOSE (SETTING 131)
M13**	5th AXIS BRAKE RELEASE	M82	TOOL UNCLAMP
M16	TOOL CHANGE (T) (same as M06)	M83**	AUTO AIR JET ON
M17**	APC PALLET UNCLAMP and OPEN APC DOOR	M84**	AUTO AIR JET OFF
M18**	APC PALLET CLAMP and CLOSE DOOR	M86	TOOL CLAMP
M19	ORIENT SPINDLE (P,R values optional)	M88**	COOLANT THROUGH SPINDLE ON (SETTING 32)
M21-M28	OPTIONAL USER M CODE INTERFACE WITH M-FIN SIGNAL	M89**	COOLANT THROUGH SPINDLE OFF (SETTING 32)
M30	PROGRAM END AND RESET (SETTING 2, 39, 56, 83)	M95	SLEEP MODE
M31	CHIP AUGER FORWARD (SETTING 114, 115)	M96	JUMP IF NO INPUT (P,Q)
M33	CHIP AUGER STOP	M97	LOCAL SUB-PROGRAM CALL (P,L)
M34	COOLANT SPIGOT POSITION DOWN, INCREMENT (+1)	M98	SUB-PROGRAM CALL (P,L)
M35	COOLANT SPIGOT POSITION UP, DECREMENT (-1)	M99	SUB/LOCALSUB-PROGRAM / RETURN OR LOOP (P) (SETTING 118)
M36**	PALLET PART READY (P)	M101	MOM (Minimum Oil Machining) CANNED CYCLE MODE (I)
M39	ROTATE TOOL TURRET (T#) (SETTING 86)	M102	MOM MODE (I,J)
M41	SPINDLE LOW GEAR OVERRIDE	M103	MOM MODE CANCEL
M42	SPINDLE HIGH GEAR OVERRIDE	M109**	INTERACTIVE USER INPUT (P)

All **M** codes are effective or cause an action at the end of the block and only one **M** code is allowed in each block.



Haas Automation Inc.

Updated on 1-01-06

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